

**Statement of Paul M. Golan
Acting Director for
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
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Development and Related Agencies
U.S. House of Representatives**

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Mr. Chairman and members of the Subcommittee, I am Paul Golan, Acting Director of the Department of Energy (DOE) Office of Civilian Radioactive Waste Management. I appreciate the opportunity to discuss the Administration's fiscal year (FY) 2007 budget request for this Program, also referred to as the Yucca Mountain Project.

INTRODUCTION

Over the last 50 years, our nation has benefited greatly from nuclear energy and the power of the atom, but a legacy marked by the generation and accumulation of more than 50,000 metric tons of spent nuclear fuel and high-level radioactive waste has been left. The waste is here today and must be dealt with. There is a strong world-wide consensus that the best, safest, long-term option for dealing with this waste is geologic isolation. According to the OECD Nuclear Energy Agency: "...from an ethical standpoint, our responsibilities to future generations are better discharged by a strategy of final disposal than by reliance on stores which require surveillance, bequeath long-term responsibilities of care, and may in due course be neglected by future societies whose structural stability should not be presumed." The National Research Council has stated, "high-level waste should be put specifically into designed and engineered facilities underground, where the local geology and groundwater conditions have been chosen to ensure isolation of the waste for tens of thousands of years or longer, and where the waste materials will migrate very slowly if they come into contact with the rock." Yucca Mountain possesses these features and with this in mind, Congress in 2002 approved the President's recommendation for development of Yucca Mountain as the Nation's spent nuclear fuel and high-level radioactive waste repository. The National Academy of Sciences has generally endorsed the geologic disposal option for high-level waste since 1957.

In judging disposal options, it is essential to remember that the comparison is not so much between ideal systems as it is between a geologic repository and perpetual at-surface storage. As the Committee knows, there is temporary surface storage of spent nuclear fuel and high level radioactive waste at 122 sites in 39 states across our Nation. Additionally, 2,000 metric tons of commercial spent nuclear fuel will be generated this year and in every succeeding year by the current fleet of commercial electrical power generating reactors as they supply 20% of our nation's electricity.

The Nuclear Waste Policy Act of 1982, as amended, defines the Federal Government's responsibility to provide permanent geologic disposal in a repository for all spent nuclear fuel and high-level radioactive waste. Within the Federal Government, the Department of Energy has the responsibility to construct and operate a repository designed to dispose of these wastes. Our Nation has and continues to benefit from the power of the atom; we cannot walk away from, ignore, or pass on to future generations the nuclear waste legacy that exists today.

BUDGET REQUEST

The work that the Department will be completing this year and in FY 2007 at Yucca Mountain is extremely important. While the Department's Civilian Radioactive Waste Management Program has experienced challenges over the years, the science behind Yucca Mountain is sound. We are working diligently to develop a license application, and to demonstrate that we can safely, predictably, and reliably manage, package, transport, and dispose of this spent nuclear fuel and high-level radioactive waste.

The actions that we have taken over the last nine months have focused on these three principles: **safety, simplicity, and reliability** and the investments we are proposing in FY 2007 support these principles. Our FY 2007 budget request of **\$544.5 million** supports:

First, development of a license application for submittal to the Nuclear Regulatory Commission (NRC) based on a safer and simpler approach to handling spent nuclear fuel and operating the repository, otherwise known as the clean-canistered approach.

Second, improvements to site infrastructure to ensure worker safety. In FY 2007, we will take steps to improve the transportation, communication, electrical distribution, and other safety related infrastructure at the site to ensure the safety of our employees, scientists, regulators, and visitors.

Third, development of a nuclear safety culture that will ensure our research, design, licensing, construction and operations are of the highest standards and earn the trust and respect required to conduct nuclear operations.

And lastly, development of a transportation infrastructure necessary to safely and securely move the spent nuclear fuel and high-level radioactive waste from where it is being temporarily stored today, to the repository for disposal.

DISCUSSION

Although this Program had intended to submit a license application to the NRC in December 2004, a number of issues have arisen that have delayed our submittal of a License Application, including development of the amended draft Environmental Protection Agency Radiation Protection Standards to extend the period of compliance from 10,000 to one million years, and redesign of the surface facilities to handle primarily canistered waste. Other matters also need to be addressed before we are ready to submit a license application.

We are committed to developing a realistic schedule that will result in the submission of a strong license application to NRC. We expect to receive and review our new design this spring and, after its approval by the Secretary, incorporate it into our baseline. Later this summer, we anticipate we will publish our schedule for submittal of the license application to the NRC.

In mid-2005 Secretary Bodman directed a thorough review of the Department's overall approach to design, licensing, and operation of the Project to determine if there were better ways to run the repository. His guidance to me was clear: "...make it safer and simpler."

With that direction, we evaluated ways to meet those objectives and late last year we announced a redirection to a predominantly **clean-canistered approach to spent fuel operations**. A single canister would be used to transport, age and dispose of the waste without ever needing to re-open the spent fuel package again. While some have been critical of this approach, we believe that the technical challenges can be resolved and the net result will be a simpler, safer and more reliable operation.

The clean-canistered approach will significantly reduce the risks of radiation exposure and contamination from spent fuel handling operations at the repository. It does this by eliminating the need for at least two massive fuel-handling facilities that were intended to handle 70,000 tons of individual spent nuclear fuel assemblies several times prior to packaging the waste for disposal. With this plan, the spent nuclear fuel primarily will be packaged for disposal by the utilities that generated the waste. This approach offers the advantage of having those who know most about the waste, in other words, the generators, be responsible for canisterization and packaging. We would thus take advantage of commercial reactor sites with existing capability and skills. We will not need to build new equipment and train operators for a capability that already exists in the private sector. We are working with industry and the utilities to develop the specifications for a canister that commercial spent nuclear fuel can be placed in after it is discharged from the reactors and initially cooled. In addition to requiring fewer, cleaner and simpler facilities, the new facility approach should be easier to design, license, build and operate.

While this approach will have short-term and long-term benefits, it will require additional time to redevelop and revise portions of the license application. Later this summer the Department expects to have a new conceptual design for the surface facilities at Yucca Mountain that supports this approach.

We remain committed to sound science. The Department announced that it has designated the Sandia National Laboratories as the lead laboratory to coordinate and organize all scientific work on the Project. Since this project represents a major scientific and technical challenge, we want to ensure the Project takes full advantage of the great resource in our national laboratories and our continued commitment to sound science is embodied in this strategy. Additionally, we are working to instill a "trust but verify" culture and part of this effort will lead to the formation of a University-based consortium to independently review key project data to ensure we stay objective and without bias.

Our budget request supports safety upgrades to an old and decaying infrastructure at the Yucca Mountain site. Starting in 1984, the Yucca Mountain Project developed an infrastructure to support scientific research at the site while working to ensure the safety of the workers. Little has been done yet to maintain the infrastructure. Starting in FY 2006 and through FY 2008 we need to make investments to improve the safety and reliability of the site's infrastructure. Improvements in the electrical distribution, communication, and emergency services infrastructure are needed. We also need to take workers out of cargo containers that they use as work centers today, and provide them more substantial structures to support ongoing work. Additionally, the access road to Yucca Mountain is a two lane road constructed in the 1950's to support other work on the Nevada Test Site; the road is very old and cannot be relied upon since it is subject to washout. It also is not the most direct or safest route to Yucca Mountain. In FY 2006 the Program will complete an environmental assessment under the National Environmental Policy Act of the proposed site infrastructure upgrades and anticipates initiating infrastructure upgrades including construction of a road alignment that fully meets current standards and codes. These upgrades are important and are required whether or not an NRC license to construct Yucca Mountain is granted.

In order for the Department to receive a license from the NRC, it must demonstrate that it can operate to nuclear standards and requirements. This involves more than filling out checklists and doing paper work, but rather involves establishment of a culture of credibility and integrity that earns respect; not by what it says, but by what it does and how it operates. We will be investing significant time and resources in developing this culture.

Lastly, in order for the repository to be able to accept spent nuclear fuel and high-level radioactive waste, we will need to develop the transportation infrastructure that can safely, securely, and reliably transport the material from where it is stored to the repository. One critical aspect is developing the rail line along the Caliente corridor to the Yucca Mountain site. In FY 2006, the Draft EIS on the rail alignment will be issued and public hearings will be held. We will focus on development of transportation requirements, and collaborative planning of transportation activities with key stakeholders. We are not starting from scratch here. Our nation and many nations throughout the world have demonstrated over several decades that we are able to safely and reliably ship nuclear material and spent nuclear fuel and high-level radioactive waste. The track record of safe transportation of such material is clear and is discussed in a new study completed by the National Academy of Sciences released in February.

FY 2007 KEY ACTIVITIES

FY 2007 will be a critical year for the program. The Department will move forward with the best, independently reviewed, science to support and develop the license application, while mindful of its obligation to begin receipt of spent nuclear fuel as early as possible. The approach which is proposed in the FY 2007 budget includes the development of the license application; the development of a transport, aging and disposal (TAD) canister; and the continuing upgrades of site infrastructure.

By the end of FY 2007, our objectives are to:

- Continue development of design and safety documentation to support a license application.
- Continue to perform operations and maintenance functions and support any enhancements to support the Licensing Support Network.
- Complete the preliminary design for a Transport, Aging and Disposal canister.
- Continue procurement activities for materials equipment and services needed for construction of the surface and subsurface facilities.
- Continue upgrades of existing infrastructure needed to ensure worker safety.
- Develop designs for site infrastructure facilities and utilities needed to support the start of construction.
- Complete the detailed work plan, cost estimate, and schedule, and establish a performance baseline for repository design and construction.

We are requesting funding for payments-equal-to-taxes to the State of Nevada and Nye County, Nevada, where Yucca Mountain is located. Our FY 2007 request also includes funding for the State of Nevada, affected units of local government, as well as funding to the University System of Nevada and Nye County and Inyo County, California, for independent scientific studies.

TRANSPORTATION

In FY 2007, the Nevada Transportation Project will focus on resolving comments from the Draft Rail Alignment EIS, issuing the Final Rail Alignment EIS, and publishing a Record of Decision for the selected rail alignment. The Record of Decision on the alignment will support completing and issuing the final design/build Request for Proposals for the rail line. DOE will ask the Bureau of Land Management to act on the Department's Right-of-Way application for construction of the rail line.

Between FY 2007 and start of repository operations, the National Transportation Project will pursue major acquisition, design, construction, and operational readiness activities. The requested funding will support the initial, long lead-time infrastructure procurements.

The National Transportation Project will establish the protocols needed to integrate, manage and safely operate the transportation system. To build on the success of the previous year, the Project will continue the procurement process for truck and rail casks and associated specialized equipment. We will also begin development of rail cars for transporting spent nuclear fuel and high-level radioactive waste. This hardware development will include a limited purchase of cask systems and prototype rail cars. These initial procurements will support emergency preparedness and security training efforts, as well as providing

opportunities to test communications and tracking systems and establish relationships with transportation service providers.

The National Transportation Project will continue to fund cooperative agreements with State regional groups and other key parties involved in transportation planning. Section 180 (c) pilot grants will also be awarded to a few states and tribes in each region in order to support operational testing and to refine the Section 180 (c) program. DOE will further prepare to implement a fully operational transportation system by integrating safety, security, and emergency response activities into all shipment plans. We will also prepare to award contracts for transportation operations, and select the secure site for command and control, communications, and tracking of these shipments.

PROGRAM MANAGEMENT & INTEGRATION

This budget request includes funding for system engineering and analyses supporting the TAD canister development effort. Also, the FY 2007 request continues to reflect the need to have a robust Quality Assurance program to ensure that we have successfully implemented NRC requirements.

The FY 2007 request contains funding for managing the integration of the project components through formal baselines, procedures and the system requirements hierarchy, and resolving cross-cutting issues that impact the waste management system, i.e., not limited to single Project issues.

Requested funding in FY 2007 for Science & Technology reflects the Department's drive to optimize the national disposal system focusing on cost savings, enhanced understanding, improved work efficiency and performance, and safety enhancement. This element supports our projects in furthering the cost-effective and efficient development, operation, and performance of the Civilian Radioactive Waste Management System.

PROGRAM DIRECTION

The program direction budget request supports Federal salaries, expenses associated with building maintenance and rent, training, and management and technical support services, which include independent Nuclear Waste Fund audits services, independent technical and cost analyses, and University-based independent technical reviews.

CONCLUSION

There is a clear national need for Yucca Mountain even if we were to shut down every commercial reactor and nuclear project in the country today. We are taking steps to ensure that we develop and construct the safest, simplest, and most straightforward repository that we possibly can, based on sound science and quality work. I believe that our license application will provide the necessary assurances that we can operate Yucca Mountain in compliance with the performance requirements of the Environmental Protection Agency and the Nuclear Regulatory Commission. We will also demonstrate that our approach to

operations will be carefully planned, logical and methodical. Our FY 2007 budget supports critical needs to move this Project forward.